

### REMARKS

Reconsideration is respectfully requested in light of the foregoing amendments and remarks which follow.

Claims 1-8 are before the Examiner. Claim 1 has been amended to more clearly define the nature of the surface modification. For the amended matter consider the paragraph starting at line 21 on page 1 of the specification. As to the new claims 7 and 8, consider Example 3, Tables 5 and 6 and the first complete paragraph on page 18. No new matter is belied to have been introduced by the new claims and the amendatory matter added to claim 1.

Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Applicants respectfully traverse.

The rejection has been maintained. The points raised by Applicants have not been addressed in a manner appreciated by applicants. There may not be express support for "at least" approximately 120 g/l but there is express support for 120 and a continuum of values above 120.

There is also express support for 266 g/l. Compaction, destructuring is well known processes and silica can only become made so dense. The lower part of the range is expressly supported. It must be at least 120 g/l. This would be clear to one skilled in the art. It would also be clear to one skilled in the art that pyrogenic silica can be densified. A value of 266 is reported in the specification for one product. More dense products are possible.

The structural modification is taught to involve mechanical action, *e.g.* ball mill, continuous ball mill. Structural modification can be followed by grinding, *e.g.* air-jet mill, toothed disc mill, pin disc mill. *See* page 3, lines 14-17. One skilled in the art would no doubt consider Examples 1-3, the comparative material, and pages 16-18 in terms of ascertaining the invention, which Applicants were in possession of.

It is respectfully submitted that when the dependent claims are read in their entirety, it is clear that Applicants are in possession of the subject matter described by dependent claim 4—surface modified destructured pyrogenic silica. A range of increasing density values is evident

from the specification. Claim 4 clearly identifies the lower end density limit.

If Applicants are deemed to be in possession of the product described by claim 1, the independent claim, upon which both claim 4 depends, why would they not also be in possession of the product of claim 4.

Withdrawal of the rejection is respectfully requested.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse.

Reconsideration is respectfully requested. "DBP value" is a recognized term of art. As of today, it appears in 106 U.S. Published Patent applications and 181 U.S. Patents. *See*, for example, US 7780937, US 3952087 and US 3975296. Its manner of measure is also well known in the art, *e.g.* ASTM D 2414.

The meaning of the term would be understood by a person of skill in the art. There is no ambiguity. Withdrawal of the rejection is respectfully requested.

Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Azechi et al. (U.S. 6,331,558). Applicants respectfully traverse.

The Azechi et al patent has again been considered. The points presented in the "Response to Arguments" section of the Office Action starting on page 11 of the Office Action have also been considered.

The Examiner appears to have maintained the rejection in light of his perception of the breadth of the claims and his belief that the claimed characteristics are inherently possessed by the Azechi et al. product.

Claim 1 has been amended to address the case law cited by the Examiner. The presence of the vinyl group and also the hydrophobic group is set forth with more specificity. The case

law cited by the Examiner deals with a simple organic molecule where a very limited number of substitutions were required. That is not the case here.

Further, with regard to the inherent presence of characteristics, the presence of the characteristics must be established with reasonable certainty. Here, the fillers differ. There is no preparatory process like that employed by Applicants. The surface modification occurs in two steps the vinyl group is affixed first and then the hydrophobic group. The structural modification occurs next using a ball mill, a continuous ball mill or like process. Then a grinding step and heat treatment can follow. The claims recite a DBP value which suggests "low structure". Pyrogenic silica typically has a high degree of structure associated with it. Fumed (pyrogenic) silica is mentioned in the "Example" section of the reference but there is no processing of the fumed silica to diminish or remove its high degree of structure. It would not seem possible that the Azechi et al. product would possess low structure, which would correspond to the claimed DBP values. Consider Tables 5 and 6 of the present specification as establishing product differences. The Educt (comparative silica) is pyrogenic silica which is not structurally modified.

It is also brought to the Examiner's attention that "compacted bulk density" is a distinct property from "Tapped density". See US 7,780,937 (*e.g.* cols. 10 and 18). Reliance on their similarity or identity to establish a line of argument of product similarity based thereon does not appear justified.

For a reference to be anticipatory, it must teach each and every element required by the claims. Withdrawal of the rejection is respectfully requested.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azechi et al (U.S. 6,331,558) in view of Bergstrom et al. (U.S. 6,384,125). Applicants respectfully traverse.

The deficiencies of Azechi et al. are discussed above. It is again respectfully submitted that Bergstrom et al. does not remedy the deficiencies relative to "low structure" product. Also Bergstrom et al. provides no guidance which would lead one to select both vinyl groups fixed to silica and then a hydrophobic group including a methyl containing silyl group also fixed to silica. Tables 5 and 6 demonstrate the superiority of the claimed product over a similar product having

only a pyrogenic silica filler in terms of tear resistance of silicone, and rheology.

Bergstrom et al does not suggest the surface modification or structure modification. Modification of fillers to have a pH of 5.0 to 10 does not lead to low structure silicas. Neutralization step is not the equivalent of a ball milling treatment. Further, colloidal or precipitated silica is not the same as pyrogenic (fumed) silica. *See* col. 3. Cabot MS75D, mentioned as a control, would appear to be the same as the comparative silica in Tables 5 and 6 of the present specification. There is no evidence or expectation that Cabot MS75D has a “low” structure.

Tables 3 and 4 (Col. 13, 14) of Bergstrom et al. do not suggest the selection of the materials needed for the claimed product or the possibility of the advantages established by Applicants and shown in Table 5 and 6. There is no teaching that the presence of affixed methyl and vinyl groups on a pyrogenic silica surface, as now claimed, results in a high tear propagation resistance silicone rubber product.

A proper prima facie case of obviousness has not been established. Further, there is no expectation, based on what the references suggest and teach that the results shown in Table 6 could be achieved or would be expected.

Withdrawal of the rejection is respectfully requested.

Claims 1-3 are rejected on the ground of non-statutory obviousness type double patenting as being unpatentable over claims 1-2 of U.S. Patent No. 7,563,839 ('839). Applicants respectfully traverse.

The claims have been further amended to maintain a clear line of demarcation between the applications.

Please note that obviousness-type double patenting rejections address a policy concern—the improper extension of a patent monopoly by an obvious variant of the claims of the original patent. It is submitted that the inventions are not the same.

Claim 1 of the '839 patent is directed to a composition of matter comprising a silicone rubber, a structure- modified hydrophobic pyrogenic silica as filler and a conductive furnace black. There are three "wherein" clauses. One specifies the silica as a silanized, structure- modified pyrogenically prepared silica with dimethylsilyl and/or monmethylsilyl groups affixed to the silica. The second specifies the silicone rubber as LSR. The third specifies the composition as a vulcanized silicone rubber mixture.

Claim 2 further limits claim 1 by specifying the manner of preparing the silica and reciting additional characteristics, *e.g.*, surface area.

Claims 1 and 2 relate to an electrically conductive silicone rubber products. The furnace conductive black promotes conductivity. Conductive furnace blacks are easier to mix in and distribute than graphite or metal powders, preference being given to silver.

It is not seen why its removal would be obvious since that act is destructive of the underlying invention. Further, the amended claims specify DBP values not taught in either claims 1 or 2 of the '839 patent and require the presence of both affixed vinyl groups and hydrophobic groups including groups containing methyl silyl groups subsequently fixed to the silica surface. The presence of these groups results in high tear resistance. *See* Example 3 in present Table 6. The claims of the '839 patent relied upon as a teaching are clearly not suggestive of a product like that now claimed.

Reconsideration and withdrawal of the rejection is respectfully requested. There is a clear line of demarcation. The openness of "comprising" does not create a selection invention when one clearly does not exist.

Claims 1-2 are rejected on the ground of non-statutory obviousness type double patenting as being unpatentable over claim 3 of US 7,713,626. Applicants respectfully traverse.

With respect to claim 1, Applicant submits a terminal disclaimer. This moots the rejection. Accordingly, withdrawal of the rejection is solicited.

**Request for Interview**

Applicants respectfully request either a telephonic or an in-person interview should there be any remaining issues.

### CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Therefore, it is respectfully requested that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, in the event that additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. 1.136(a), and any fees required therefore are hereby authorized to be charged to **Deposit Account No. 02-4300, Attorney Docket No. 032301.592.**

Respectfully submitted,

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